ABSTRACT

[046] Unidirectional and bi-directional low capacitance transient voltage suppressors ("TVS") and steering diodes are disclosed. In one embodiment, the TVS comprise TVS p-n junction diode element(s), (101) low-capacitance ("LC") PIN or NIP diode element(s) (102), the TVS p-n junction diode element(s) (101) being placed in series with and in opposite polarity to the LC PIN or NIP diodes (102). In another embodiment, the steering diode comprise only LC PIN or NIP diode(s) (402, 403) arranged as steering diodes. This circuit arrangement is operable to clamp high-voltage transients of either polarity to a predetermined level, minimizes parasitic losses and signal-line distortion, and minimize capacitance variation. The present invention is also operable to reduce the complexity of impedance matching within a high frequency circuit.